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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/821,090

**Applicant(s)**

STUART ET AL.

**Examiner**

Haresh N. Patel

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-32 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 08 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/ISD)  
Paper No(s)/Mail Date 4/8/04  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1-32 are subject to examination.

***Drawings***

2. The figures submitted on the filing date of this application are acknowledged.

***Information Disclosure Statement***

3. An initialed and dated copy of the applicant's IDS form 1449, is attached to the instant Office action, please see attachments section of the attached form PTO-326 containing paper dates.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 31-32 are rejected under 35 U.S.C. 101 because the claimed invention is directed to a non-statutory subject matter. The claims contain carrier, which should be computer storage medium such as memory, etc. that is limited to hardware.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Barkley et al. 5,825,768 (Hereinafter Barkley).

7. Referring to claim 1, Barkley discloses a method for sender-initiated credit recovery in a closed-loop credit based flow control system (e.g., col., 3), the method comprising: assigning a number of credits to a sender unit in the credit based flow control system (e.g., col., 3); decrementing a credit count in the sender unit in response to the sender sending data to the receiver (e.g., col., 4); incrementing the credit count in the sender unit in response to receiving returned credits from the receiver unit (e.g., col., 4); determining if a loss or gain in the number of credits in the closed-loop credit based flow control system has occurred (e.g., col., 5); and adjusting the credit count based on the determined loss or gain (e.g., col., 5).

8. Referring to claim 2, Barkley discloses the claimed limitations as rejected above. Barkley also discloses wherein each credit indicates an amount of data that the sender unit can send to a receiver unit (e.g., col., 6).

9. Referring to claim 3, Barkley discloses the claimed limitations as rejected above. Barkley also discloses wherein determining if a loss or gain in the number of credits in the credit based

flow control system has occurred (e.g., col., 5) comprises: sending a credit check message from the sender unit to the receiver unit; initializing a counter with a number of outstanding credits (e.g., col., 6); decrementing the counter based on a number of credits returned from the receiver unit (e.g., col., 6); receiving, at the sender unit, a credit check return message from the receiver unit that indicates that the value of the outstanding credits counter is the loss or gain (e.g., col., 6).

10. Referring to claim 4, Barkley discloses the claimed limitations as rejected above. Barkley also discloses wherein initializing the counter includes initializing the counter upon sending the credit check message from the sender unit to the receiver unit (e.g., col., 7).

11. Referring to claim 5, Barkley discloses the claimed limitations as rejected above. Barkley also discloses wherein adjusting the credit count based on the determined loss or gain includes performing a signed addition of the number of outstanding credits in the counter and the credit count (e.g., col., 7).

12. Referring to claim 6, Barkley discloses the claimed limitations as rejected above. Barkley also discloses wherein sending the credit check message includes sending the credit check message in-band with data (e.g., col., 8).

13. Referring to claim 7, Barkley discloses the claimed limitations as rejected above. Barkley also discloses where initializing the counter includes using the value of the credit count and the

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value of max credits determined by the position of the credit check message in a data stream (e.g., col., 7).

14. Referring to claim 8, Barkley discloses the claimed limitations as rejected above. Barkley also discloses wherein decrementing the counter includes decrementing the counter by credits returned to the sender unit from the receiver unit between sending the credit check message and receiving the credit check return message (e.g., col., 7).

15. Referring to claim 9, Barkley discloses the claimed limitations as rejected above. Barkley also discloses decrementing the counter by a number of credits returned in the credit check return message; and incrementing the credit count by the number of credits returned in the credit check return message (e.g., col., 6).

16. Referring to claim 10, Barkley discloses the claimed limitations as rejected above. Barkley also discloses decrementing the counter by a number of credits returned in the credit check return message (e.g., col., 6).

17. Referring to claim 11, Barkley discloses the claimed limitations as rejected above. Barkley also discloses wherein the credit check return message carries a count of unreturned credits equal to zero (e.g., col., 5).

18. Referring to claim 12, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses where the sending order of the credit check return messages and credit return messages from the receiver is maintained to the sender (e.g., col., 5).

19. Referring to claim 13, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses wherein the sender unit is a credit head end unit (e.g., col., 4).

20. Referring to claim 14, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses wherein the receiver unit is a credit queue end unit (e.g., col., 4).

21. Referring to claim 15, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses a method for determining if an error in the number of credits in the credit based flow control system has occurred (e.g., col., 5) comprises: receiving a credit check message from a sender unit at a receiver unit (e.g., col., 5); sending a credit check return message from the receiver unit to the sender unit that indicates that the value of the outstanding credits counter is the error (e.g., col., 6).

22. Referring to claim 16, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses enqueueing data to a credit managed data queue upon arrival at the receiver unit (e.g., col., 6); and returning credits to the sender unit based on an amount of data dequeued from the credit managed queue (e.g., col., 6).

23. Referring to claim 17, Barkley discloses the claimed limitations as rejected above. Barkley also discloses enqueueing the credit check message to a credit managed queue in order of reception with the data (e.g., col., 4), and returning the credit check return message upon dequeue of the credit check message (e.g., col., 4).

24. Referring to claim 18, Barkley discloses the claimed limitations as rejected above. Barkley also discloses wherein sending a credit check return message includes sending a credit check return message upon receiving the credit check message (e.g., col., 5).

25. Referring to claim 19, Barkley discloses the claimed limitations as rejected above. Barkley also discloses wherein the credit check return message carries any previously unreturned credits for dequeued data from the receiver to the sender unit (e.g., col., 5).

26. Referring to claim 20, Barkley discloses the claimed limitations as rejected above. Barkley also discloses wherein the credit check return message carries the number of unreturned credits in the receiver unit, including the credit value of data in the queue and any previously unreturned credits for dequeued data (e.g., col., 6).

27. Referring to claim 21, Barkley discloses the claimed limitations as rejected above. Barkley also discloses returning unreturned credits for dequeued data before sending the credit check return message with a count of unreturned credits equal to zero (e.g., col., 5).



28. Referring to claim 22, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses a closed-loop credit based flow control system comprising: a sender unit configured to: assign a number of credits in the credit based flow control system (e.g., col., 4); decrement a credit count in response to the sender sending data to a receiver unit (e.g., col., 5); increment the credit count in response to receiving returned credits from the receiver unit (e.g., col., 5); determine if a loss or gain in the number of credits in the credit based flow control system has occurred (e.g., col., 6); and adjust the credit count based on the determined loss or gain (e.g., col., 6).

29. Referring to claim 23, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses wherein each credit indicates an amount of data that the sender unit can send to the receiver unit (e.g., col., 6).

30. Referring to claim 24, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses send a credit check message from the sender unit to the receiver unit (e.g., col., 5); initialize a counter with a number of outstanding credits (e.g., col., 5); decrement the counter based on a number of credits returned from the receiver unit (e.g., col., 5); receive, at the sender unit, a credit check return message from the receiver unit that indicates that the value of the outstanding credits counter is the loss or gain (e.g., col., 6).

31. Referring to claim 25, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses initialize a counter upon sending the credit check message from the sender unit to the receiver unit (e.g., col., 6).

32. Referring to claim 26, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses a receiver unit, the receiver unit configured to: receive a credit check message from the sender unit (e.g., col., 3); and send a credit check return message that indicates that a number of outstanding credits (e.g., col., 3).

33. Referring to claim 27, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses wherein the receiver unit is further configured to: enqueue data to a credit managed data queue upon arrival at the receiver unit (e.g., col., 5); and return credits to the sender unit based on an amount of data dequeued from the credit managed queue (e.g., col., 5).

34. Referring to claim 28, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses wherein the receiver unit is further configured to: enqueue the credit check message to a credit managed queue in order of reception with the data, and return the credit check return message upon dequeue of the credit check message (e.g., col., 6).

35. Referring to claim 29, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses a system comprising: one or more network devices (e.g., col., 4) including: a sender unit; and a receiver unit (e.g., col., 3), wherein the sender is configured to:

assign a number of credits in the credit based flow control system (e.g., col., 4); decrement a credit count in response to the sender unit sending data to a receiver unit (e.g., col., 4); increment the credit count in response to receiving returned credits from the receiver unit (e.g., col., 4); determine if a loss or gain in the number of credits in the credit based flow control system has occurred (e.g., col., 5); and adjust the credit count based on the determined loss or gain (e.g., col., 5).

36. Referring to claim 30, Barkley discloses the claimed limitations as rejected above. Barkley also discloses wherein the receiver unit configured to: receive a credit check message from the sender unit (e.g., col., 3); and send a credit check return message that indicates that a number of outstanding credits (e.g., col., 3).

37. Referring to claim 31, Barkley discloses the claimed limitations as rejected above. Barkley also discloses a computer program product, tangibly embodied in an information carrier, for executing instructions on a processor (e.g., col., 4), the computer program product being operable to cause a machine to: assign a number of credits in the credit based flow control system (e.g., col., 4); decrement a credit count in response to the sender unit sending data to a receiver unit (e.g., col., 4); increment the credit count in response to receiving returned credits from the receiver unit (e.g., col., 5); determine if a loss or gain in the number of credits in the credit based flow control system has occurred (e.g., col., 5); and adjust the credit count based on the determined loss or gain (e.g., col., 5).

38. Referring to claim 32, Barkley discloses the claimed limitations as rejected above.

Barkley also discloses to receive a credit check message from the sender unit; and send a credit check return message that indicates that a number of outstanding credits (e.g., col., 6).

39. Claims 1-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Lynch et al. 2004/0236675 (Hereinafter Lynch).

40. Referring to claim 1, Lynch discloses a method for sender-initiated credit recovery in a closed-loop credit based flow control system (e.g., page 5), the method comprising: assigning a number of credits to a sender unit in the credit based flow control system (e.g., page 5); decrementing a credit count in the sender unit in response to the sender sending data to the receiver (e.g., page 6); incrementing the credit count in the sender unit in response to receiving returned credits from the receiver unit (e.g., page 6); determining if a loss or gain in the number of credits in the closed-loop credit based flow control system has occurred (e.g., page 5); and adjusting the credit count based on the determined loss or gain (e.g., page 5).

41. Referring to claim 2, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein each credit indicates an amount of data that the sender unit can send to a receiver unit (e.g., page 6).

42. Referring to claim 3, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein determining if a loss or gain in the number of credits in the credit based flow control system has occurred (e.g., page 5) comprises: sending a credit check message from

the sender unit to the receiver unit; initializing a counter with a number of outstanding credits (e.g., page 6); decrementing the counter based on a number of credits returned from the receiver unit (e.g., page 6); receiving, at the sender unit, a credit check return message from the receiver unit that indicates that the value of the outstanding credits counter is the loss or gain (e.g., page 6).

43. Referring to claim 4, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein initializing the counter includes initializing the counter upon sending the credit check message from the sender unit to the receiver unit (e.g., page 7).

44. Referring to claim 5, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein adjusting the credit count based on the determined loss or gain includes performing a signed addition of the number of outstanding credits in the counter and the credit count (e.g., page 7).

45. Referring to claim 6, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein sending the credit check message includes sending the credit check message in-band with data (e.g., page 8).

46. Referring to claim 7, Lynch discloses the claimed limitations as rejected above. Lynch also discloses where initializing the counter includes using the value of the credit count and the

value of max credits determined by the position of the credit check message in a data stream (e.g., page 7).

47. Referring to claim 8, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein decrementing the counter includes decrementing the counter by credits returned to the sender unit from the receiver unit between sending the credit check message and receiving the credit check return message (e.g., page 7).

48. Referring to claim 9, Lynch discloses the claimed limitations as rejected above. Lynch also discloses decrementing the counter by a number of credits returned in the credit check return message; and incrementing the credit count by the number of credits returned in the credit check return message (e.g., page 6).

49. Referring to claim 10, Lynch discloses the claimed limitations as rejected above. Lynch also discloses decrementing the counter by a number of credits returned in the credit check return message (e.g., page 6).

50. Referring to claim 11, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein the credit check return message carries a count of unreturned credits equal to zero (e.g., page 5).

51. Referring to claim 12, Lynch discloses the claimed limitations as rejected above. Lynch also discloses where the sending order of the credit check return messages and credit return messages from the receiver is maintained to the sender (e.g., page 5).

52. Referring to claim 13, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein the sender unit is a credit head end unit (e.g., page 6).

53. Referring to claim 14, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein the receiver unit is a credit queue end unit (e.g., page 6).

54. Referring to claim 15, Lynch discloses the claimed limitations as rejected above. Lynch also discloses a method for determining if an error in the number of credits in the credit based flow control system has occurred (e.g., page 5) comprises: receiving a credit check message from a sender unit at a receiver unit (e.g., page 5); sending a credit check return message from the receiver unit to the sender unit that indicates that the value of the outstanding credits counter is the error (e.g., page 6).

55. Referring to claim 16, Lynch discloses the claimed limitations as rejected above. Lynch also discloses enqueueing data to a credit managed data queue upon arrival at the receiver unit (e.g., page 6); and returning credits to the sender unit based on an amount of data dequeued from the credit managed queue (e.g., page 6).

56. Referring to claim 17, Lynch discloses the claimed limitations as rejected above. Lynch also discloses enqueueing the credit check message to a credit managed queue in order of reception with the data (e.g., page 6), and returning the credit check return message upon dequeue of the credit check message (e.g., page 6).

57. Referring to claim 18, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein sending a credit check return message includes sending a credit check return message upon receiving the credit check message (e.g., page 5).

58. Referring to claim 19, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein the credit check return message carries any previously unreturned credits for dequeued data from the receiver to the sender unit (e.g., page 5).

59. Referring to claim 20, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein the credit check return message carries the number of unreturned credits in the receiver unit, including the credit value of data in the queue and any previously unreturned credits for dequeued data (e.g., page 6).

60. Referring to claim 21, Lynch discloses the claimed limitations as rejected above. Lynch also discloses returning unreturned credits for dequeued data before sending the credit check return message with a count of unreturned credits equal to zero (e.g., page 5).



61. Referring to claim 22, Lynch discloses the claimed limitations as rejected above. Lynch also discloses a closed-loop credit based flow control system comprising: a sender unit configured to: assign a number of credits in the credit based flow control system (e.g., page 6); decrement a credit count in response to the sender sending data to a receiver unit (e.g., page 5); increment the credit count in response to receiving returned credits from the receiver unit (e.g., page 5); determine if a loss or gain in the number of credits in the credit based flow control system has occurred (e.g., page 6); and adjust the credit count based on the determined loss or gain (e.g., page 6).

62. Referring to claim 23, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein each credit indicates an amount of data that the sender unit can send to the receiver unit (e.g., page 6).

63. Referring to claim 24, Lynch discloses the claimed limitations as rejected above. Lynch also discloses send a credit check message from the sender unit to the receiver unit (e.g., page 5); initialize a counter with a number of outstanding credits (e.g., page 5); decrement the counter based on a number of credits returned from the receiver unit (e.g., page 5); receive, at the sender unit, a credit check return message from the receiver unit that indicates that the value of the outstanding credits counter is the loss or gain (e.g., page 6).

64. Referring to claim 25, Lynch discloses the claimed limitations as rejected above. Lynch also discloses initialize a counter upon sending the credit check message from the sender unit to the receiver unit (e.g., page 6).

65. Referring to claim 26, Lynch discloses the claimed limitations as rejected above. Lynch also discloses a receiver unit, the receiver unit configured to: receive a credit check message from the sender unit (e.g., page 5); and send a credit check return message that indicates that a number of outstanding credits (e.g., page 5).

66. Referring to claim 27, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein the receiver unit is further configured to: enqueue data to a credit managed data queue upon arrival at the receiver unit (e.g., page 5); and return credits to the sender unit based on an amount of data dequeued from the credit managed queue (e.g., page 5).

67. Referring to claim 28, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein the receiver unit is further configured to: enqueue the credit check message to a credit managed queue in order of reception with the data, and return the credit check return message upon dequeue of the credit check message (e.g., page 6).

68. Referring to claim 29, Lynch discloses the claimed limitations as rejected above. Lynch also discloses a system comprising: one or more network devices (e.g., page 6) including: a sender unit; and a receiver unit (e.g., page 5), wherein the sender is configured to: assign a

number of credits in the credit based flow control system (e.g., page 6); decrement a credit count in response to the sender unit sending data to a receiver unit (e.g., page 6); increment the credit count in response to receiving returned credits from the receiver unit (e.g., page 6); determine if a loss or gain in the number of credits in the credit based flow control system has occurred (e.g., page 5); and adjust the credit count based on the determined loss or gain (e.g., page 5).

69. Referring to claim 30, Lynch discloses the claimed limitations as rejected above. Lynch also discloses wherein the receiver unit configured to: receive a credit check message from the sender unit (e.g., page 5); and send a credit check return message that indicates that a number of outstanding credits (e.g., page 5).

70. Referring to claim 31, Lynch discloses the claimed limitations as rejected above. Lynch also discloses a computer program product, tangibly embodied in an information carrier, for executing instructions on a processor (e.g., page 6), the computer program product being operable to cause a machine to: assign a number of credits in the credit based flow control system (e.g., page 6); decrement a credit count in response to the sender unit sending data to a receiver unit (e.g., page 6); increment the credit count in response to receiving returned credits from the receiver unit (e.g., page 5); determine if a loss or gain in the number of credits in the credit based flow control system has occurred (e.g., page 5); and adjust the credit count based on the determined loss or gain (e.g., page 5).

71. Referring to claim 32, Lynch discloses the claimed limitations as rejected above. Lynch also discloses to receive a credit check message from the sender unit; and send a credit check return message that indicates that a number of outstanding credits (e.g., page 6).

72. Claims 1-32 are rejected under 35 U.S.C. 102(a) as being anticipated by Sarcanin et al. 2003/0145205 (Hereinafter Sarcanin).

73. Referring to claim 1, Sarcanin discloses a method for sender-initiated credit recovery in a closed-loop credit based flow control system (e.g., page 5), the method comprising: assigning a number of credits to a sender unit in the credit based flow control system (e.g., page 5); decrementing a credit count in the sender unit in response to the sender sending data to the receiver (e.g., page 6); incrementing the credit count in the sender unit in response to receiving returned credits from the receiver unit (e.g., page 6); determining if a loss or gain in the number of credits in the closed-loop credit based flow control system has occurred (e.g., page 5); and adjusting the credit count based on the determined loss or gain (e.g., page 5).

74. Referring to claim 2, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein each credit indicates an amount of data that the sender unit can send to a receiver unit (e.g., page 6).

75. Referring to claim 3, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein determining if a loss or gain in the number of credits in the credit based flow control system has occurred (e.g., page 5) comprises: sending a credit check

message from the sender unit to the receiver unit; initializing a counter with a number of outstanding credits (e.g., page 6); decrementing the counter based on a number of credits returned from the receiver unit (e.g., page 6); receiving, at the sender unit, a credit check return message from the receiver unit that indicates that the value of the outstanding credits counter is the loss or gain (e.g., page 6).

76. Referring to claim 4, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein initializing the counter includes initializing the counter upon sending the credit check message from the sender unit to the receiver unit (e.g., page 7).

77. Referring to claim 5, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein adjusting the credit count based on the determined loss or gain includes performing a signed addition of the number of outstanding credits in the counter and the credit count (e.g., page 7).

78. Referring to claim 6, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein sending the credit check message includes sending the credit check message in-band with data (e.g., page 8).

79. Referring to claim 7, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses where initializing the counter includes using the value of the credit count

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and the value of max credits determined by the position of the credit check message in a data stream (e.g., page 7).

80. Referring to claim 8, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein decrementing the counter includes decrementing the counter by credits returned to the sender unit from the receiver unit between sending the credit check message and receiving the credit check return message (e.g., page 7).

81. Referring to claim 9, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses decrementing the counter by a number of credits returned in the credit check return message; and incrementing the credit count by the number of credits returned in the credit check return message (e.g., page 6).

82. Referring to claim 10, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses decrementing the counter by a number of credits returned in the credit check return message (e.g., page 6).

83. Referring to claim 11, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein the credit check return message carries a count of unreturned credits equal to zero (e.g., page 5).

84. Referring to claim 12, Sarcenin discloses the claimed limitations as rejected above.

Sarcenin also discloses where the sending order of the credit check return messages and credit return messages from the receiver is maintained to the sender (e.g., page 5).

85. Referring to claim 13, Sarcenin discloses the claimed limitations as rejected above.

Sarcenin also discloses wherein the sender unit is a credit head end unit (e.g., page 6).

86. Referring to claim 14, Sarcenin discloses the claimed limitations as rejected above.

Sarcenin also discloses wherein the receiver unit is a credit queue end unit (e.g., page 6).

87. Referring to claim 15, Sarcenin discloses the claimed limitations as rejected above.

Sarcenin also discloses a method for determining if an error in the number of credits in the credit based flow control system has occurred (e.g., page 5) comprises: receiving a credit check message from a sender unit at a receiver unit (e.g., page 5); sending a credit check return message from the receiver unit to the sender unit that indicates that the value of the outstanding credits counter is the error (e.g., page 6).

88. Referring to claim 16, Sarcenin discloses the claimed limitations as rejected above.

Sarcenin also discloses enqueueing data to a credit managed data queue upon arrival at the receiver unit (e.g., page 6); and returning credits to the sender unit based on an amount of data dequeued from the credit managed queue (e.g., page 6).

89. Referring to claim 17, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses enqueueing the credit check message to a credit managed queue in order of reception with the data (e.g., page 6), and returning the credit check return message upon dequeue of the credit check message (e.g., page 6).

90. Referring to claim 18, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein sending a credit check return message includes sending a credit check return message upon receiving the credit check message (e.g., page 5).

91. Referring to claim 19, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein the credit check return message carries any previously unreturned credits for dequeued data from the receiver to the sender unit (e.g., page 5).

92. Referring to claim 20, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein the credit check return message carries the number of unreturned credits in the receiver unit, including the credit value of data in the queue and any previously unreturned credits for dequeued data (e.g., page 6).

93. Referring to claim 21, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses returning unreturned credits for dequeued data before sending the credit check return message with a count of unreturned credits equal to zero (e.g., page 5).



94. Referring to claim 22, Sarcenin discloses the claimed limitations as rejected above.

Sarcenin also discloses a closed-loop credit based flow control system comprising: a sender unit configured to: assign a number of credits in the credit based flow control system (e.g., page 6); decrement a credit count in response to the sender sending data to a receiver unit (e.g., page 5); increment the credit count in response to receiving returned credits from the receiver unit (e.g., page 5); determine if a loss or gain in the number of credits in the credit based flow control system has occurred (e.g., page 6); and adjust the credit count based on the determined loss or gain (e.g., page 6).

95. Referring to claim 23, Sarcenin discloses the claimed limitations as rejected above.

Sarcenin also discloses wherein each credit indicates an amount of data that the sender unit can send to the receiver unit (e.g., page 6).

96. Referring to claim 24, Sarcenin discloses the claimed limitations as rejected above.

Sarcenin also discloses send a credit check message from the sender unit to the receiver unit (e.g., page 5); initialize a counter with a number of outstanding credits (e.g., page 5); decrement the counter based on a number of credits returned from the receiver unit (e.g., page 5); receive, at the sender unit, a credit check return message from the receiver unit that indicates that the value of the outstanding credits counter is the loss or gain (e.g., page 6).

97. Referring to claim 25, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses initialize a counter upon sending the credit check message from the sender unit to the receiver unit (e.g., page 6).

98. Referring to claim 26, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses a receiver unit, the receiver unit configured to: receive a credit check message from the sender unit (e.g., page 5); and send a credit check return message that indicates that a number of outstanding credits (e.g., page 5).

99. Referring to claim 27, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein the receiver unit is further configured to: enqueue data to a credit managed data queue upon arrival at the receiver unit (e.g., page 5); and return credits to the sender unit based on an amount of data dequeued from the credit managed queue (e.g., page 5).

100. Referring to claim 28, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein the receiver unit is further configured to: enqueue the credit check message to a credit managed queue in order of reception with the data, and return the credit check return message upon dequeue of the credit check message (e.g., page 6).

101. Referring to claim 29, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses a system comprising: one or more network devices (e.g., page 6) including: a sender unit; and a receiver unit (e.g., page 5), wherein the sender is configured to:

assign a number of credits in the credit based flow control system (e.g., page 6); decrement a credit count in response to the sender unit sending data to a receiver unit (e.g., page 6); increment the credit count in response to receiving returned credits from the receiver unit (e.g., page 6); determine if a loss or gain in the number of credits in the credit based flow control system has occurred (e.g., page 5); and adjust the credit count based on the determined loss or gain (e.g., page 5).

102. Referring to claim 30, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses wherein the receiver unit configured to: receive a credit check message from the sender unit (e.g., page 5); and send a credit check return message that indicates that a number of outstanding credits (e.g., page 5).

103. Referring to claim 31, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses a computer program product, tangibly embodied in an information carrier, for executing instructions on a processor (e.g., page 6), the computer program product being operable to cause a machine to: assign a number of credits in the credit based flow control system (e.g., page 6); decrement a credit count in response to the sender unit sending data to a receiver unit (e.g., page 6); increment the credit count in response to receiving returned credits from the receiver unit (e.g., page 5); determine if a loss or gain in the number of credits in the credit based flow control system has occurred (e.g., page 5); and adjust the credit count based on the determined loss or gain (e.g., page 5).

104. Referring to claim 32, Sarcanin discloses the claimed limitations as rejected above. Sarcanin also discloses to receive a credit check message from the sender unit; and send a credit check return message that indicates that a number of outstanding credits (e.g., page 6).

### ***Conclusion***

In order to expedite the prosecution of this case, multiple references are used for the rejections to demonstrate that several references disclose the claimed subject matter of the claims.

Examiner has cited particular columns and line numbers and/or paragraphs and/or sections and/or page numbers in the reference(s) as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety, as potentially teaching, all or part of the claimed invention, as well as the context of the passage, as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haresh Patel whose telephone number is (571) 272-3973. The examiner can normally be reached on Monday, Tuesday, Thursday and Friday from 10:00 am to 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn, can be reached at (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Haresh N. Patel/

Primary Examiner, Art Unit 2154

4/10/08